NSDistributedNotifcationCenter. All local area brokers could subscribe to such notifications by informing the NSDistributedNotificationCenter. The NSDistributedNotifctionCenter, upon receipt of a notification from the global caster, would forward the notification to all of the subscribing brokers. Alternately, the JMS (Java Messaging Service) Publish/Subscribe API could used.

Upon receipt of a message requesting transmission, a broker object sends a message including the content, a specified transmission rate, and a request that the content be transmitted at the specified rate to its one or more associated MPE modules. The one or more MPE modules, in turn, packetize the received content for transmission over the wireless link using their associated transmitters. In embodiments where a broker module operates on a general purpose computer remote from the computer upon which its one or more associated MPE modules operate, link may be done in a number of ways known in the art including SOAP (Simple Object Access Protocol) and RMI (Remote Method Invocation).

According to embodiments, the operation of an MPE module may involve placing the received data into UDP packets, which are encapsulated within IP packets, which are in turn encapsulated into DVB packets. Details of this MPE technique may be found, for example, in standards documents EN 301 192 and EN 300 468. At the application layer, usable protocols include UHTTP (unidirectional HTTP), RTSP (Real-Time Streaming Protocol), and FTP. In certain embodiments, IP encapsulation may make use of IPSEC to ensure that content will only be usable by receivers with the appropriate credentials. During the encapsulation process, the above-described unique identifier may be added to at least one of the headers. For example, when UHTTP is used, the unique identifier may be encoded in the UHTTP header under the UUID field.

The DVB packets so produced are transmitted over the DVB-T wireless link as is known in the art. When a transmission rate is specified by the caster, that rate is adhered to. Where no rate is specified, as may be the case with service announcements, the system might be built to transmit such data at a predetermined rate.

It is noted that in certain embodiments particular multicast addresses may be associated with blocks. In such embodiments, receivers could make use of these multicast addresses when filtering. Thus a particular multicast address could be associated, for example, with a particular content item (e.g., a particular football match-up of Scotland vs. England) or with a particular content type (e.g. all live football matches).

Reception and Subscription

As described above, service announcements are periodically sent to reception terminals over the wireless link. In embodiments of the present invention, a terminal offerings module running on each terminal may save this data and use it to build a listing of available distributions of content. The terminal offerings module may associate with each listed distribution the unique identifier relating to that distribution. The terminal offerings module may interface with a GUI so as to present a browsable list of the offerings to a terminal user. Some content may be noted in the offerings list as being transmitted over the wireless link at a specific time (e.g., 12 Dec 2002 at 1:23:12 p.m.), other content may be listed as being transmitted before a certain date (e.g., some time before 11 Dec. 2002), while other content might be listed with no suggestion or indication of time of transmission. The user may select items from this schedule for viewing, download, or the like.

When a content item is selected by the user, a terminal filter module running on the terminal notes the unique identifier relating to that distribution. The terminal filter module may

then monitor incoming packets for that selection by looking for packets containing that unique identifier. Identified packets would be subject to further processing; for example if the packets contained streaming MP3 audio, this audio might be decoded and presented to the user.

In addition to having the terminal filter module watch for content chosen from the offerings list, a user may also have the terminal filter module monitor for content having certain properties. This may be achieved in several ways. In one embodiment, a user may specify that she is interested in content with corresponding metadata that possesses one or more specified properties. For example, a user might request that she is interested in all western television shows that are less than 30 minutes long. In response, the terminal filter module could look through the metadata of its collected service announcements to look for content matching the selected properties. The terminal filter module could then note the respective unique identifiers and monitor incoming packets for packets specifying one of the noted identifiers.

In another embodiment pattern recognition could be employed. For example, the terminal filter module might provide functionality by which a user could select a file, incoming stream, or other content item and ask the module to find similar items. For example, a user could select an MP3 format music file from her terminal's internal storage and ask that similar files be filtered for. In response, the terminal filter module could have a pattern recognition module create a neural network, using the selected music file as training data, that could be used to determine a level of similarity between new data fed into it and the data that was used to train it. Incoming packets which were determined to correspond to music files could then be decoded and sent to the pattern recognition module for processing using the neural network. Once a certain threshold of dissimilarity between the training data and the incoming data was determined, application level processing of packets related to that content item, as identified by the unique